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A model was prepared for an information storage and retrieval system for reporting job placement follow-through data of persons trained in industrial education programs in the state public schools. Recommendations for application of the model are made on a statewide basis to serve the information needs of local, state, and federal industrial education agencies. New forms are recommended, using standardized codes and reporting procedures to provide data of job placements for required reports. The prescored card was selected for the questionnaire instrument with responses read directly by various electronic data processing techniques. The registration forms and the in-class follow-through forms are completed by all industrial students while in school. The out-of-class follow-through form is mailed to students after they leave school. Samples of the forms are included in this report. From the data collected many types of directories could be compiled, estimates could be made of when the students in any particular training program would be ready for employment, the students' major could be identified, individual dropouts could be identified early, and job placements could be accounted for, thereby evaluating certain industrial education programs and classes. The system may stand alone, operate in conjunction with other projects, or become a part of a larger information storage and retrieval system. (MM)

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A Proposed System for Reporting Job Placement Follow-through Data

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CALIFORNIA STATE DEPARTMENT OF EDUCATION
Max Rafferty—Superintendent of Public Instruction
Sacramento 1968

VT006371

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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A Proposed System for Reporting Job Placement Follow-through Data

Prepared by the
Bureau of Industrial Education
Division of Instruction
State Department of Education

PREFACE

Information storage and retrieval are now words in general usage by educators. Many innovations in education will come about through the application of this new science, largely yet unused, by educators.

Recognizing the need of a system for evaluating and assessing industrial education, the Bureau of Industrial Education entered into a contract with the San Diego Junior Colleges for the services of Wayne M. Harris as Special Consultant, to develop a model, Information Storage and Retrieval System for Reporting Job Placement Follow-Through Data of Persons Trained in Industrial Education Programs in California Public Schools. The study was made during the 1966-67 school year.

The proposed system was designed to be used statewide and to include high school, junior college, and adult students in industrial education programs.

The Bureau of Industrial Education appointed an ad hoc advisory committee to assist with the study. The members were:

Joseph C. Bellenger, Assistant Superintendent for Vocational and Adult Education, San Jose Unified Schools
Nathan H. Boortz, Director, Technical-Vocational Education, Foothill College, Los Altos Hills
Irvin Colt, Dean and Coordinator, Technical and Vocational Education, Mt. San Antonio College, Walnut
David E. Fleckles, Coordinator of Vocational Education, Sweetwater Union High School District, Chula Vista
Bernard Gjerdrum, Director of Vocational Education and Federal Programs, College of San Mateo
Russell P. Journigan, Dean of Vocational Education, Sierra College, Rocklin
Lee W. Ralston, Director, Division of Practical Arts Education, Los Angeles County Schools
Donald F. Reynolds, Supervisor of Vocational Education, Division of Adult Education, Los Angeles City Schools
Louis A. Schwark, Director, Vocational Education, Modesto Junior College
A. L. Waltz, Supervisor, Trade and Technical Education, San Francisco Unified Schools

Appropriations provided under the Vocational Education Act of 1963 aided in financing this project.

EUGENE GONZALES
Associate Superintendent and
Chief, Division of Instruction

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Chief, Bureau of
Industrial Education

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A PROPOSED MODEL FOR AN INFORMATION STORAGE AND RETRIEVAL SYSTEM FOR REPORTING JOB PLACEMENT FOLLOW-THROUGH DATA OF PERSONS TRAINED IN INDUSTRIAL EDUCATION PROGRAMS IN CALIFORNIA PUBLIC SCHOOLS

Acronym:

Project: JOB DATA

Jobs, Occupation and Background, for
Data Automation in Technical Areas

INTRODUCTION

The local, state, and federal industrial education agencies needed similar information. Each had different ways of collecting and computing answers for similar questions. It was not practical, with or without machinery, to interpret these diverse methods into a single report. Standardized report forms with simple reporting methods would be more economical and efficient for all concerned. Statewide cooperation would be required on what questions needed to be asked, when to ask them, and, of course, some coding systems.

Job placement reporting had reached a point where it needed special study. There was a need, and the time was right for the science of information storage and retrieval to be applied to one industrial education evaluative factor--that of job placements.

Purpose. With the advent of the Vocational Education Act of 1963, and other federal efforts in vocational education, the need for some standardization in the collecting and analyzing of data had become necessary.

The purpose of this study was to prepare a model for an Information Storage and Retrieval System for Reporting Job Placement Follow-Through Data of Persons Trained in Industrial Education Programs in California Public Schools and to make recommendations for the application of the model on a statewide basis.

Objective. Industrial education has been subjectively evaluated, and to a lesser degree objectively evaluated, by all elements of society. The need now is for a system of objectivity evaluating industrial educational programs. Industrial education has been of value to society. By applying modern information storage and retrieval principles to the reporting and recording of job placement follow-through data, industrial education can now prove its value to society. A proper information storage and retrieval system would also make the participation in a follow-through study by educators and students less burdensome--and more rewarding.

SUMMARY

The need was to propose a model and to make recommendations for an information storage and retrieval system for reporting and recording job placement follow-through data of persons trained in industrial education programs in California public schools.

Industrial educators needed to react to current, ongoing data objectively derived from a standard data base. The Vocational Education Act of 1963 further stimulated the need for a data system to effectively and objectively evaluate industrial education programs. To meet these needs, the California State Department of Education, Bureau of Industrial Education, suggested that a study be made to help meet these needs during the school year 1966-67. A model data system was to be ready for trial for the year 1967-68.

An ad hoc advisory committee was set up to aid in the study. The committee met in Sacramento in February, 1967, to discuss the study and proposals and has continued to give counsel and guidance to the study.

As a result of the study some new forms are recommended, using standardized codes and reporting procedures. The new forms will provide data on job placements for certain required reports, such as VE 45, and will probably reduce the overall number of report forms necessary.

Many of the present-day data gathering methods and processing techniques were considered. The prescored card was selected for the questionnaire instrument. Response positions, punched out by hand, are read directly by various electronic data processing (EDP) techniques.

The registration forms, verification of enrollment and addresses, and the in-class follow-through forms are completed by all industrial education students while still in school. The out-of-class follow-through form is mailed to students after they leave school. Samples of the forms are included in the report.

The system, as planned, may stand alone, operate in conjunction with other EDP projects, or become a part of larger information storage and retrieval systems. The system is versatile and will accept new types of data and data gathering techniques for other evaluations and assessment of industrial education.

The data collected from the students while still in class would permit an unduplicated count of all (or any part, such as sex, age, ethnic background, or locale) industrial education students at any time. Many types of directories could be compiled such as for industrial education schools and/or classes. Estimates could be made of when the students in any particular training program would be ready for employment.

The student's major may be identified by declared major or by the actual major. Individual dropouts could be identified early enough to be helped and the drop-out rate established for the total state or by special groups.

Last, but not least, job placements could be accounted for, thereby evaluating certain industrial education programs and classes.

SEARCH OF THE LITERATURE AND PROCEDURE

Search of the Literature. The information storage and retrieval system for reporting job placement follow-through data incorporates parts of many existing EDP programs. The model can be seen as a cooperative effort of the best of present systems. The literature on follow-up revealed a breadth of studies from simple, single class tabulation to elaborate, automated, statewide and nationwide studies.

Two of the more elaborate studies are: 1. Grossman and Howe's (4) study for establishing a system of Regional Education Data Processing Centers in the State of California, and, 2. The Vocational Education Information System (VEIS) by Federal Electric Corporation, (10) a nationwide data gathering system. Several of the planned California Education Data Processing Centers are now operating. The VEIS has been completed and is being considered for possible nationwide use. If either of these systems materialize as planned, the present model, as recommended in this report, could easily be incorporated.

Grossman and Howe (4), Dearden (1), and Manatt (6), seem to agree that the use of regional data processing centers (decentralization) is proper. Further, Goldstein (3) suggests some sharing of data processing procedures and equipment by smaller school districts. The Office of the Los Angeles County Superintendent of Schools (7) has a computer (RCA 201) for processing pupil personnel data. The recommendations of this report concur with the above references. A basic assumption, made before the study was started, was that EDP would be available to all participating schools.

Commercial equipment and systems of data transmission and storage are also available. The Tele-Computer Center, American Telephone and Telegraph Company (2), has developed a method of gathering data via a teleprinter network. IBM's System/360 for school data problems is particularly adapted to the problem of an information storage and retrieval system for job placement data. The Tele-Computer (2) incorporates a unique "Error Control Procedure," which is an inherent part of the recommendations made for this study.

The Florida Project, "A System for Processing Educational Data Electronically," (11) by L. Everett Yarbrough, has been "dreamed up" by the staff of the Florida State Department of Education. The Florida Project suggests that error control should be completely the responsibility of the schools involved. This report recommends that errors, or any changes at all, be the responsibility of the student, and then the school.

Mailey (5) has just completed (August, 1966) "A Vocational-Technical Student Follow-up System," using EDP, and "psychological" and "mechanical" methods to generate a high percentage of response.

Iowa Education Information Center (IEIC), a computer-based educational information center (8), has developed ways to gather data, put it in a computer, and extract pertinent portions quickly for use by different levels of educational systems.

The State Department of Education, Bureau of Industrial Education, will, as much as possible, utilize any existing systems or experimental systems that

are available. Present equipment and machinery will be used at all levels at which it exists. For instance, Grossman and Howe's (4) project in regional education data processing can already supply data for the information storage and retrieval system for reporting job placements, particularly for high school students.

A summary of the above reference would indicate that any statewide job placement reporting system would of necessity be highly automated, divided into large segments (regions), and be consistent with other data gathering efforts.

Standardization of data and data gathering techniques, coding systems, EDP, and computers all are necessary parts of a total system.

Follow-Through Versus Follow-up. The data collected for the statewide reporting of job placements will be student oriented. The recording of data will start when the student enters a California public school offering industrial education programs and will continue on during the student's educational and working life.

Current, ongoing data are needed to evaluate industrial education programs while the classes still exist and while the whereabouts of the students are still known. Working with the student directly and following through seems more appropriate than following up after the student is gone. Although both terms, follow-through and follow-up, will be used interchangeably in this report, the term follow-through will be used predominately.

General Plan Followed in Developing the Model. The information storage and retrieval system for reporting job placement follow-through data, as recommended here, was established through a search of the literature, documentation both from the educators and the electronic data programmer's viewpoint, observation of existing programs, and direct contact with persons interested in evaluating industrial education programs.

The report will describe the processes to be used to collect, store, and retrieve the data concerned with job placement information of persons trained in industrial education programs in California public schools.

Procedure. Questionnaires, registration packets from various junior colleges, high schools, and adult schools, follow-up models and past studies, observation of existing systems, actual EDP programs, industrial brochures, and a search of the literature, were used in the design of the proposed model for an information storage and retrieval system for reporting job placement follow-through data.

The questions were collected, sorted out, and classified; the most suitable were redesigned or reworded so that answers could be made in a single response position. The response position was further outlined with a box. With this type of response, many of the present EDP systems could be used, such as: 1) Electronic mark sense: special pencils are used to mark the response positions. The marks are sensed, or picked up electronically by feelers and recorded; 2) Optical mark sensing or scanning: regular #2 lead pencils are used to mark the response positions. The marks are sensed with optics. Optical character reading is the next step; here printed figures and letters can be read by optical means and recorded; 3) Manual key punching: for this system a key punch operator reads the response positions and machine punches

a card which, in turn, will be used to process the data; 4) Prescored cards: the response positions are pre-cut in such a way that a tab can easily be removed by hand. The latter method, where a response position tab is ready to be punched out by hand, was selected--selected because it suits the present purposes better. Some data has been included in the appendix about optical mark sense. Optical mark sense or optical character scanning will, when perfected, be used for this project. The questionnaires and systems have been so designed.

From the material collected and analyzed, a standardized registration form for junior colleges was designed (Student Transmittal Form of the California Education Data Processing Center (4) was used for high school students), along with three other questionnaires and one computer print-out form. These forms will be explained under "Flow Chart and Report Forms."

Job placement data will be asked of all students enrolled in any industrial education class. The registration forms and questionnaires are printed and special field tests performed, in selected schools, to check out the procedure, materials, and processes. Future plans are to make extensive field trials of the total system in three or four school districts throughout the State of California in the school year 1967-68.

Limitations. The proposed model for an Information Storage and Retrieval System for Job Placement Follow-Through Data of Persons Trained in Industrial Education Programs in California Public Schools has been limited, as the title implies, to the reporting of job placements of the persons named.

Ad Hoc Advisory Committee. An ad hoc advisory committee was formed and met in Sacramento in February, 1967. (See appendix for members and minutes.) A preliminary model and questionnaires were presented to the committee. After extensive discussion and revisions, the committee accepted the preliminary model and questionnaires. Different members of the committee have continued their interest in the study by making further contributions. An important contribution of the advisory committee for this study was the adding or redesigning of questions to include job placement credit for:

1. Students going into the armed services in an occupation in which training was received, or into a related occupation.

2. The trade extension or supplementary education students who are promoted or advanced to better or new jobs as a result of training.

3. Students who do not complete any particular industrial education course or program but are placed on jobs as a result of the training.

A Start. The proposed model represents a combination of the most desirable--the most applicable portions of present systems. However, there may be unrecognized factors which would preclude the desirability of using this method at the present time. But it is a start; and a start needs to be made towards automating the collecting of data--data in general, but in particular job placement data for making evaluative judgments concerned with industrial education

in California. Data is needed that can be used on a local school level, which demands detail and large returns, and on a statewide basis, which requires considerably less detail and fewer returns. The apparent need of some standardization, more accurate data, current data, and a system for reporting and recording job placement data and other evaluative factors were among the main reasons the study was performed.

Educators today freely use the phrase "information storage and retrieval," and the vocabulary of the electronic data processors is even more common. Industry (and to a lesser degree government) is well versed in the use and the "state of the art" of the information storage and retrieval techniques. Job placement reporting is a real need, but other equally important evaluations and assessments also need to be made in industrial education. A proper information storage and retrieval system should be able to serve many present and future needs. First an information storage and retrieval system for industrial education data must be established--almost any system to build on; then a process of feedback and iteration would soon show the flaws and shortcomings of the system.

Evaluation. The study proposed a system for evaluating one factor concerned with industrial education programs, that of job placement, as compared with enrollments. The evaluative study needs to be evaluated.

In preparation for the evaluation, previous years' records were studied, and the enclosed formulas were devised and the computation made as shown. The same computation should be applied to this study, if the data are similar. Adjustment should be made for any data that are not similar such as that of unduplicated student count as opposed to a duplicated count.

Instructions for computing percentage of pre-employment student placement:

The print-out for 1964-65 and 1965-66 did not separate pre-employment and supplementary enrollments. The following procedure was used to arrive at these percentages:

Enrollment--The enrollment figures are for male and female pre-employment (A-B-C) only. The sub-total(s) of either pre-employment or supplementary enrollment (whichever was lesser) was subtracted from the grand total(s).

Placements--Those few persons placed from supplementary enrollment were subtracted from the total placement(s) of pre-employment enrollment.

Calculation--The placement figure is divided by the enrollment and multiplied by 100 to arrive at the percentage of placements from pre-employment enrollment.

$$\frac{\text{Pre-employment placements}}{\text{Pre-employment enrollments}} \times 100 =$$

Percentage of pre-employment enrollees placed

Example: $\frac{421}{3787}$ pre-employment students placed / pre-employment students enrolled

$$3787 \overline{)\ 421.0000} = .1111$$ (to 4 places after the decimal point)

$$.1111 \times 100 = 11.1100 \text{ or } 11.11\%$$

FLOW CHART AND REPORT FORMS

Flow Chart. Reading from top left to right are the in-class questionnaires, requiring 100% reporting, followed by the out-of-class questionnaires, center left. All data are entered into storage, and each succeeding questionnaire is machine addressed to the student--either addressed to the classroom for the in-class forms or the home for the out-of-class forms.

The student will be asked only once for any particular bit of data.

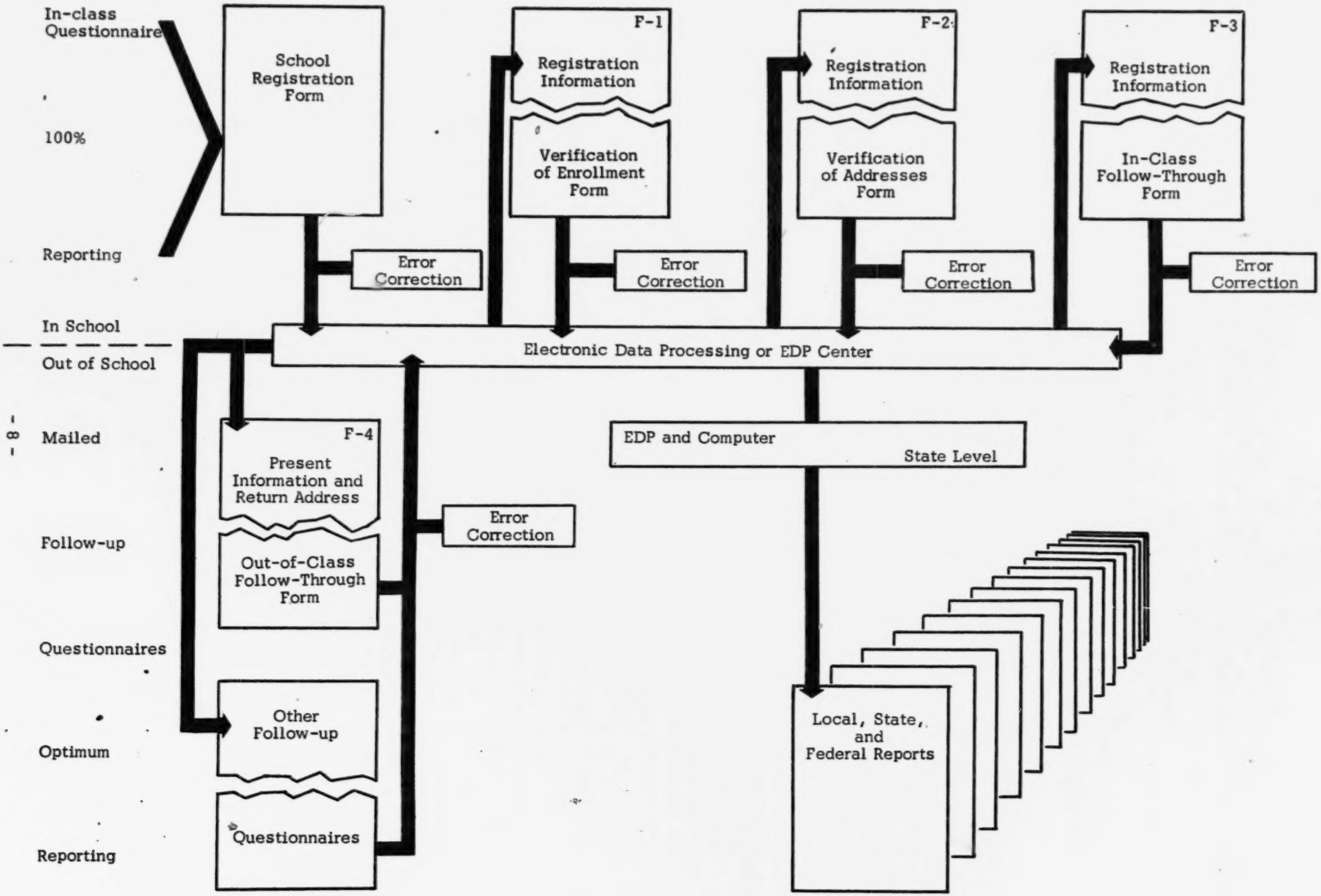
The electronic data processing or EDP Center that represents the data input and output for the registration form and questionnaire is anywhere the actual records are stored. Local, state, and federal agencies, can request data, as permitted, from the EDP Centers.

Report Forms. The remainder of the report will describe the questionnaire flow chart and questionnaires. These forms are new to the State Department of Education, Bureau of Industrial Education. The forms, other than the registration form, have been designed so that they may be machine processed directly without going through a key punching operation. The questionnaires, as received from the student, are ready to process either on card sorting machines or to enter directly into storage. As described earlier, the response positions on the questionnaire are prescored, ready to be punched out by hand.

The data requested in the registration form and the questionnaires that follow are more than adequate to complete the VE 45 form, Follow-up of Students Completing Vocational Education Programs (State Department of Education form and its parallel Federal form). If data other than on-job placements were added, certain of the VE forms could be eliminated.

FLOW CHART

QUESTIONNAIRES FOR FOLLOW-THROUGH AND JOB PLACEMENT REPORTS



Standardized Registration for Junior Colleges Form R-1

A standardized registration form greatly simplifies the total effort of collecting and processing job placement data. The use of this form is recommended. Following are some advantages:

1. Only one program would have to be written for any particular type of EDP equipment. Writing EDP programs for diverse registration forms, and assorted EDP equipment, would not be practical. Standardized forms would offer standard type of data. As data requirements change (and data requirements will change) questions could be added or removed from the questionnaire for the whole state so that the reporting data base would remain the same.

2. The student should have to furnish the data requested on the registration form only once for his entire school life, no matter which school he wishes to attend in California.

3. Standardized data available from the total state on a continuous, ongoing basis over a long period of time would offer a source of information that would produce immediate answers to some types of "follow-up" studies.

4. The inclusion of standard data for ethnic background would permit many evaluation assessments to be made for groups with special needs. (See appendix for ethnic background letter.)

There would be other advantages, and certainly some disadvantages, with standardization, but some standardization must be required if job placement is to be processed on a statewide basis.

Only the first few questions on the Registration Form for Junior College is of immediate concern for the study. These are the name, social security number, and addresses. The addresses are needed for the Out-of-Class Follow-Through Form F-4, EDP mailing program.

The Form R-1 was designed so that the information could be manually key-punched and/or read by optical mark scanning equipment. The total form was designed so that it could also be used conventionally, i.e., straight reading of data.

Social security numbers. Social security numbers will be required of all students registering in California schools offering industrial education programs. Although another number could be used temporarily until a social security number could be secured, the registration will not be considered as complete until the social security number has been recorded. The schools should help the students who do not have social security numbers to apply for them.

All junior college students entering a California public school offering industrial education programs will register using the Standardized Registration for Junior Colleges Form R-1.

High school students will use the Student Data Transmittal registration form offered by the California Educational Data Processing Centers. The Student Data Transmittal form can supply all the data, except the social security number. Even here the school would not be remiss to request, and to assist, the student in getting the social security number.

After the student registers the data are checked for obvious errors and completeness and a notice mailed to the student notifying him of any changes that are necessary (a "change" is a correction of any kind) and whether or not he has been accepted or cleared for admission to the school.

Error control. There are many error control features built into each step of the system. Any change, or errors, made by the student, will be the student's responsibility to correct. It is suggested that after the student appears in person and registers, the required "clearance of admission" be mailed to him. This will verify his address. Any "changes" would be noted, printed out by the computer, and sent to the student (via mail). If these changes were not made, or the form not received by the student, the registration would not be considered as complete.

Mailing any necessary correspondence to the student would be a continuous check on his address; and if out-of-district or out-of-state tuition is to be charged for attendance, a savings could be made by finding incorrect substitute addresses.

The student should now be completely registered, cleared for admission, and enrolled in the classes of his choice. The records are now complete and correct and have been entered into storage. The industrial education student may now be identified for the first time.

Verification of Enrollment Form F-1 and Verification of Addresses Form F-2

The Verification of Enrollment Form F-1, and the Verification of Addresses Form F-2, are machine addressed and sent to each industrial education class.

The Verification of Enrollment Form F-1 is a pre-printed questionnaire on a prescored card as partially described under "Procedure" of this report. (Also see appendix for actual card.) The student's name, social security number, class and school code are all pre-recorded on, and machine punched into, the card. The name, social security number, codes, and later the home address are referred to as the student's "address." The student is to check the data already on the card, read the questions and make the proper responses (answers) by punching out the prescored tabs. If the student is on the class roster, but not actually in class, there is a response position for the instructor to punch out. Only one such questionnaire has to be completely filled out by the student, but one card will be dated and signed for each class the student is presently in.

The Verification of Address Form F-2, is a complete machine generated print-out (taken from the registration form). If the data is correct, the student does nothing; if incorrect, the student makes corrections and returns the form for updating of the records. Only one such form, if there are any changes, needs to be acted upon.

Kind of data available. The following kinds of current ongoing data are now possible.

1. Total enrollment of all industrial education students. Figures can be compiled as to ethnic background, sex, age, marital status, locale, etc. (See Registration Form R-1 for junior colleges. Somewhat less data would be available for high school and adult students.)

2. Unduplicated student count.

3. Directory for all industrial education students.

4. Directory of all industrial education classes.

5. Directory of all California public schools offering industrial education classes and what classes are offered.

6. Total enrollment in a particular type of training program and when each student will be ready for employment.

7. Students may be identified by stated major or by the major determined by the courses taken.

These data are some of the more obvious, but many more questions could be asked of the data bank, especially if the Registration Form for Junior Colleges would become standard--standard, at least, as to content.

Drop-out rate. Since the enrollment of all classes is now a matter of record and the data is continually being entered into the system and can be withdrawn anytime, it would now be possible to establish drop-out rates for individual classes, school districts, regions, or for the total state. Drop-out rates by ethnic background, sex, marital status, etc., could also be established. These kind of data are important--but more important, the counseling departments can now be in a position to study current data as to drop-outs and perhaps work directly with the student. The drop-out data is a "side-effect" evaluation factor of the proposed model for recording and reporting job placement data.

In-Class Follow-Through Form F-3

The In-Class Follow-Through Form F-3 is caused to be sent by one of the questions on the Verification of Enrollment Form F-1. The student is asked the anticipated date of employment. If the date is not known, the date the class was to end is recorded. Before either of these dates occur, the computer addresses the F-3 questionnaire to the student asking him for further data. There are eight questions on the form; but for the purpose of the job placement study, the student is asked if he is going to work and if the occupation is one for which he is training, a related occupation, or an unrelated occupation.

An In-Class Follow-Through Form F-3 must be completed for every student who verified enrollment in the class. If the student is now in class at the time the questionnaire is sent out, the instructor or other responsible person will be required to complete the questionnaire in the absence of the student. For those students leaving earlier than originally expected, the instructor would have extra blank cards (also for use if mistakes are made in punching out the wrong holes) on which the student could enter his name and social security number and answer the questions.

A continuous flow of data is now being entered into storage. The data collected thus far, while the student is still in school, is local school data. The individual school would require a complete student's record. The school district or region divisions would require only parts of these data and would have it retrieved from the school's data bank.

Short cut. The recommendations, procedures, and forms described thus far are not unique. Some schools in California already can supply these kind of data. This period of data collection could be considered an in-service training period for both the student and the instructor. The student may be shown how to fill out questionnaires and a list of services he might like to use or subscribe to. (See appendix for Services and Rewards to Students.)

The instructor is training, or helping to train, students so that job placements can take place. The study is evaluating that factor--job placements--directly. It is important that the instructor understands his part in the job placement follow-through study.

Although a follow-up study on job placements can start with the next form (Out-of-Class Follow-Through Form F-4), all the forms described thus far are recommended.

When all the recommended forms are used for reporting job placement follow-through data, the afore listed "Kind of Data Available" are possible plus the following:

1. Start of job placement count.

2. The drop-out rate of individual classes or program could be established--established by ethnic background, sex, age, marital status, and by locale.

3. The drop-out can also be individually identified.

4. Predict enrollment figures for the next term.

5. Partially evaluate individual industrial education classes on job placements and student drop-out basis.

These data and more are the beginning of a continuous follow-through study of job placements.

Out of Class Follow-Through Form F-4

This is the first true follow-through instrument. The Out-of-Class Follow-Through Form F-4 presents the greatest problem. But, with the aid of a computer and the addresses given on Form F-2, and the later corrections, if any, the problem would be greatly simplified--at least at the school and individual level. This Form F-4 is caused to be sent to the former student by one of the following:

1. The completion date of the major

2. The student going to work (a new word is "work-out")

3. Or dropping out of school

The Out-of-Class Follow-Through Form F-4 will be addressed (the first time to permanent home address) to the former student soon after the student leaves school. The In-Class and Out-of-Class Follow-Through Forms F-3 and F-4 are almost identical--only the tense is changed; and they perform about the same functions.

There are four possible addresses to which the Form F-4 is sent. A special EDP program will need to be designed to accommodate the complicity of such a program (see "Mailing Procedures" in the appendix).

The next unnamed form (see the Flow Chart, lower left) is yet to be designed. The suggestion is that as new questions are directed to the system (as a result of having a system), new questions would be designed and mailed to all former students on the student's birthdate, with birthday greetings. Long-term continuity in follow-through studies would open up many new avenues for evaluating industrial education programs.

With or without this last form, job placement follow-through data is now continuously being stored and retrieved from the data bank. The present questions can be factor analyzed and many new questions can be asked of the data bank as a result of feedback and iteration.

Returns. Job placement follow-through data has been collected and analyzed as one factor for evaluating industrial education programs. These data are individual school data, with the individual school being responsible for the collecting and processing. The individual school would perhaps need a greater percentage of returns to properly evaluate individual programs or classes than the district, region, or state, would need to make overall evaluations.

This continuous incoming job placement data, considered on a statewide basis, and for state purposes, would permit new approaches to be taken in collecting, processing, and analyzing data. For instance, sample populations of some particular segment of industrial education could be identified and data retrieved from the data banks to fit the pre-determined sample population.

SUMMARY OF REPORT FORMS

1. The student registers (R-1 or Student Data Transmittal).

2. The student verifies the data (F-1 and F-2).

3. Before the student leaves the class, the In-Class Follow-Through Form F-3 will be completed and after the student leaves the school, the:

4. Out-of-Class Follow-Through Form F-4 will be sent. Current, ongoing data is now available for research; follow-through studies; and local, state, and federal reports.

In accepting almost any part of these recommendations, the degree of sophistication necessary to accomplish the whole is also accepted. Example: (Taken from context) "...the student will be asked for the same information only once" dictates a computer to store, retrieve, and print out the data.

An information storage and retrieval system is possible and necessary, and, in part, exists for properly reporting job placement follow-through data for the California State Department of Education, Bureau of Industrial Education.

CONCLUSION

The need to evaluate California industrial education in general, and job placements in particular, is urgent. Measuring how well industrial education is helping groups with specific needs is even more urgent.

The machinery and know-how and the capabilities of the industrial educators are such that a system, almost any system, once started could not help but succeed. The expense need not be great nor the time long for a data gathering system to begin operating--using present machinery where it exists.

There should be no obstacle great enough to long deter industrial educators from the urgency of evaluating their programs; industrial educators' reactions to evaluations, objectively derived, has relevance to the immediate future of industrial education.

APPENDIX

Report Forms

Services and Rewards

Mailing Procedures

Ethnic Background Letter

Definitions

Bibliography

Recommendations

REPORT FORMS:

STANDARDIZED REGISTRATION FOR JUNIOR COLLEGES, FORM R-1

STUDENT DATA TRANSMITTAL
(For High School)

VERIFICATION OF ENROLLMENT FORM F-1

IN-CLASS FOLLOW-THROUGH FORM F-3

OUT-OF-CLASS FOLLOW-THROUGH FORM F-4

CALIFORNIA STATE DEPARTMENT OF EDUCA
BUREAU OF INDUSTRIAL EDUCA
FORM

STANDARDIZED REGISTRATION FORM FOR JUNIOR COLLEGES

SOCIAL SECURITY NUMBER

USE PEN - DO NOT USE NICKNAMES OR ABBREVIATIONS

MUST BE SUBMITTED IN PERSON

NAME

Print one letter per square - LAST name FIRST name MIDDLE initial Leave one square between names

☐ Mr. ☐ Mrs. ☐ Miss

1. ADDRESS WHILE ATTENDING SCHOOL:

Number Street City Zip Code Telephone

2. LEGAL RESIDENCE: Adults (over 21 years of age) and married minors:
I consider my legal address to be: (P. O. Box not accepted)

a. ☐ Same as above
b. ☐ Different from above; it is:

Number Street City County Zip Code State or Foreign Country

3. This must be completed by students under 21 who have not been married: (Please Print)

a. NAME OF LEGAL GUARDIAN _____
Last First Middle

b. RELATIONSHIP OF GUARDIAN TO YOU:

☐ Father ☐ Mother ☐ Other - Specify _____

GUARDIAN'S LEGAL ADDRESS:
c. ☐ Same as student's address while attending school
d. ☐ Same as student's legal residence address
e. ☐ Different from above: _____
Number Street City State Zip Code
(P. O. Box not accepted)

4. IN CASE OF SERIOUS ILLNESS, INJURY, NOTIFY: (Please Print)

NAME: _____
Last First Middle

a. RELATIONSHIP: ☐ Spouse ☐ Immediate Family ☐ Relative ☐ Other

ADDRESS:
b. ☐ Same as student's address while attending school
c. ☐ Same as student's legal residence address
d. ☐ Same as student's guardian's address
e. ☐ Different from above: _____
Number Street City State Zip Code
(P. O. Box not accepted)

5. BIRTHDATE _____
Month Day Year

6. ETHNIC BACKGROUND:

WHITE
☐ Spanish Surname ☐ Other White

NONWHITE
☐ Negro ☐ Chinese Japanese Korean ☐ American Indian ☐ Other Nonwhite

7. MARITAL STATUS

☐ Married ☐ Widowed ☐ Never Married ☐ Divorced ☐ Separated

8. NAME UNDER WHICH TRANSCRIPT(S) WILL ARRIVE (Maiden) _____

9. ATTENDANCE STATUS:

a. Have you previously registered for classes here? ☐ Yes ☐ No

Did you attend? ☐ Yes ☐ No

b. If yes, give dates: From _____ To _____ Was this Summer Session only? ☐ Ye ☐ No

c. Name under which you registered: ☐ Same as maiden name above in Item 8

d. ☐ Same as name at top of this Registration Form

REPORT OF JOB PLACEMENT, REGISTRATION FORM R-1

ERAL

data requested here, for the most part, are required for the proper reporting of job placements as well as other evaluative studies, the actual form is not. This is a composite of several registration packets from junior colleges offering vocational education and lt schools. This form, and those that follow, asks the student but once for any particular bit of information.

TRUCTIONS FOR FORM R-1

s form must be presented in person. Use pen, and do not use nicknames or abbreviations.

cial Security Number | | | | | | | | | |

Enter the nine digit social security number in the squares provided.

Note: A social security number is required of all students who are taking a vocational class in preparation for employment. Registration should not be considered as complete until a social security number has been recorded here.

me | | | | | | | | | | | | | | | | | | | | | | | | | | | |

rt printing your last name in the squares provided, using one square per letter. After your last name, leave one square and print ur first name. Leave a square after your first name and print your middle initial. Stop when you run out of squares. Be sure to dicate the correct sir title--Mr., Mrs., or Miss.

m 1 -- Enter the address and telephone number of the place you will be staying while attending school. Be sure to include the proper ZIP CODE.

m 2 -- If the address of your "legal residence" is not the same as Item 1, check the box on line 2b and enter your legal residence address on the line provided, again include the proper ZIP CODE.

m 3 -- If you are under 21 years of age and have not been married, this section must be completed. Print legal guardian's name on line 3a and check appropriate box on line 3b, and specify the relationship by writing it in the blank space provided.

Box 3c--Check this box if the address of your legal guardian is the same as the address you use while going to school (Item 1).

Box 3d--Check this box if your legal guardian's address is the same as the address of your legal residence (Item 2).

Box 3e--If the address of your legal guardian is different than any of the above, enter the new address on line 3e.

m 4 -- Print the name of the person to be notified in case of sericus illness or injury, and check the appropriate box on line 4a.

Box 4b--Check this box if the address of the person just named is the same as the address you use while going to school (Item 1).

Box 4c--Check this box if the address of the person just named is the same as the address of your legal residence (Item 2).

Box 4d--Check this box if the address of the person just named is the same as your legal guardian's address (Item 3).

Box 4e--If the address of the person to be notified in case of serious illness or injury is different than any of the above, enter the new address on line 4e.

em 5 -- Enter birthdate: month, day, and year.

em 6 -- Check the appropriate box under "White" or "Nonwhite".

em 7 -- Check the box under Item 7 that indicates your present marital status.

em 8 -- If transcripts are needed from other schools and are under a different name than used on this registration form, enter that name on Item 8.

em 9 -- Answer the questions of Item 9 and check the appropriate boxes on line 9a. If you have attended this school before, enter those dates on line 9b and check the last box on line 9b if this was summer session only.

Box 9c--Check this box if the name you previously registered under was the same as Item 8.

Box 9d--Check this box if there has been no change of name for registration.

10. ENROLLMENT PLAN:

☐ A two-year degree ☐ General education courses to transfer to a four-year college ☐ On the Job Training ☐ MDTA ☐ Completion Certificate

☐ Adult ☐ High School

☐ Apprentice ☐ Off-Campus ☐ Specified business courses ☐ Trade Extension Supplementary Education

11. CHECK EDUCATIONAL BENEFITS YOU INTEND TO DRAW:

☐ 1966 G. I. Bill ☐ Vet Dependent ☐ War Orphan ☐ Vocational Rehabilitation ☐ Disabled Vet ☐ Other

12. PRESENT OCCUPATION, IF ANY _____ How many hours per week? _____

13. CHECK HIGHEST GRADE COMPLETED IN GRADE SCHOOL.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8

14. EDUCATIONAL BACKGROUND: Warning: No applicant may ignore previous schooling if transcripts are required. New applicants--instruct each school you list below to mail transcripts directly to us. Applicants for readmission--list and file transcripts from all colleges attended after you ceased attending this college.

Name of High School Last Attended	City	State	Attendance Dates From	Attendance Dates To	Last Grade Completed (If not a graduate)	Date Graduated

15.

Name of Other College/University	City	State	Attendance Dates From	Attendance Dates To	Approximate Units Completed	Grade Point Average	Degree (If Any)
A.							
B.							
C.							

16. IF ANY OF THE ABOVE COLLEGES ATTENDED ARE IN CALIFORNIA, WERE YOU CLASSIFIED A CALIFORNIA RESIDENT? ☐ Yes ☐ No

17. BIRTHPLACE: _____ (City) _____ (State or Country) HEIGHT _____ (Feet - Inches) WEIGHT _____ (Pounds)

Are you an American Citizen? ☐ Yes ☐ No If no, indicate type of Visa: _____

18. HAVE YOU HAD A SERIOUS HEALTH PROBLEM, INJURY, OR SURGERY? ☐ Yes ☐ No

a. If yes, explain _____

19. FOR SCHOOL USE ONLY: ☐☐ ☐☐☐ ☐☐☐☐

SCHOOL CODE

I understand that I am responsible for having official transcripts of any high school and previous college record sent directly to this college before I will be permitted to register for classes. I also certify that I have listed above all schools or colleges attended after high school graduation, and THAT I HAVE NOT BEEN DISQUALIFIED FROM LAST SCHOOL OF ATTENDANCE.

DATE _____ SIGNATURE _____

tem 10 -- Check the squares that describe the type of enrollment plan you will be under at this time.

tem 11 -- Check the educational benefits, if any, you intend to draw while in school at this time.

n 12 -- If you are working, or intend to work while at school, enter the name of the occupation in Item 12 and how many hours you expect to work per week.

n 13 -- Check the box which indicates the highest year you completed in grade or elementary school.

em 14 -- Complete as directed.

n 15 -- Complete as directed.

n 16 -- If any of the colleges listed in Item 16 are in California, were you classified as a California resident? (Check the appropriate box.)

n 17 -- Enter birthplace: city, state or country. Enter height: feet, inches; weight: pounds.

Indicate citizenship by marking a "yes" or "no" answer. If you are not a citizen indicate the type of visa you will be using while attending school.

18 -- Any health problem, or handicap, that would detract from your school work should be noted here and the appropriate box checked.

19 -- For school use only. Enter all school codes necessary for proper identification by EDP. The boxes can contain the present code used by the State Department of Education, Bureau of Industrial Education.

r today's date and sign your name in the spaces provided.

Report of Job Placement

STUDENT DATA TRANSMITTAL
EDUCATIONAL DATA PROCESSING CENTER

DATE

STUDENT NAME

1. INDICATE CHANGES OR ADDITIONS IN RED ABOVE BOXES TO BE CORRECTED.
2. CHECK TYPE OF TRANSACTION MADE ON THIS TRANSMITTAL.
   1. NEW ENROLLEE _____
   2. CHANGE _____
   3. WITHDRAWAL _____

COUNTY (2)	DISTRICT (3)	SCHOOL (7)	STUDENT NUMBER (8)	SCHOOL NAME

STUDENT NAME - LAST, FIRST, MIDDLE (9)	BIRTH DATE (10)	(13)	DATE ENROLLED (14)	(16)	(17)	HM. RM. (15)	COUNSELOR - TEACHER (18)	CO. (21)	DIST. (22)	RESIDENCE ATTEND. (23)

A

STREET ADDRESS (26)	CITY (27)	ZIPCODE (28)	HOME TELEPHONE NO. (29)

ACTUAL BEGINNING SCHOOL MONTH (11) _____

B

(30)	(31)	(32)	(33)	(34)	(35)	(36)	(37)

COURSE SECTION NUMBERS

BIRTHPLACE - STATE (38)

C

PARENT OR GUARDIAN NAME (39)	IF PARENT NOT HOME CONTACT (40)	TELEPHONE NO. (41)	POLIO (74)	HEALTH (71)	PL 874 (72)	DR. TR. (73)	TET AID (43)	SYM. (75)

D

IN CASE OF EMERGENCY

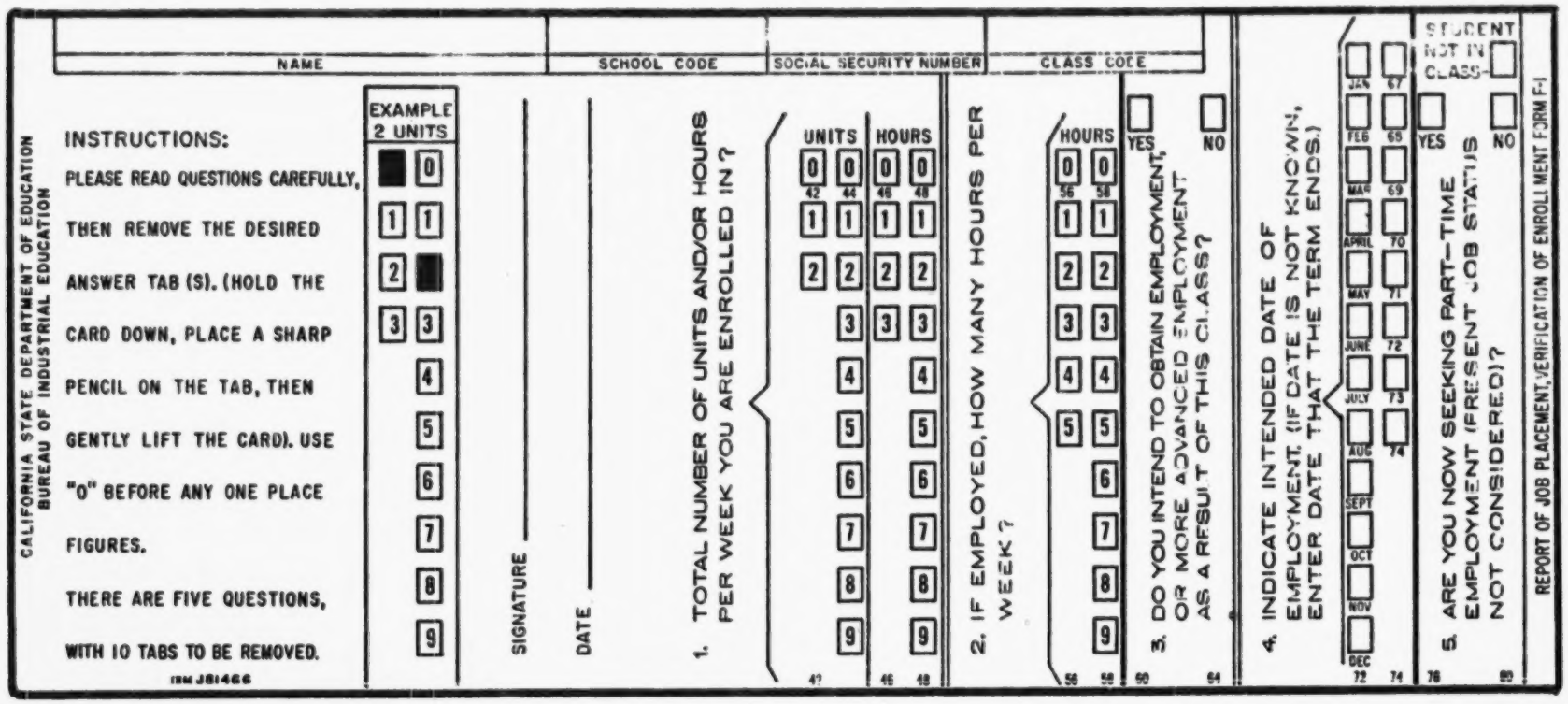
REASON FOR WITHDRAWAL _____

WITHDRAWAL DATE ____ MO. ____ DAY ____ YR.

LAST SCHOOL MONTH ATTENDED _____

REDPIO MFI (9-66)

Student Data Transmittal - High School Students



Report of Job Placement

Verification of Enrollment
Form F-1

(Front)

(Back)

INSTRUCTIONS FOR FORM F – 1:

The student, with the help of the instructor, will check the data already entered, read the questions, and punch out the boxes as described in the instructions. Any errors on the card should be brought immediately to the attention of the EDP department.

The student will sign one card for every vocational class he is in. If the student is not enrolled in the class at the time this form is sent out, the instructor is to return the card, indicating in the "box" in the upper right hand corner of the sheet that the student is not in the class. This is a "verification of enrollment" so only students who are presently in the class are to be counted.

The data on this form is added to the student's record and stored. This questionnaire would answer such questions as: How many students are now entered in a particular trade area, or areas? When will they be ready for employment?

ITEM 1- Enter the units and/or hours for the purpose of determining "full-time" or "part-time" school status of the student.

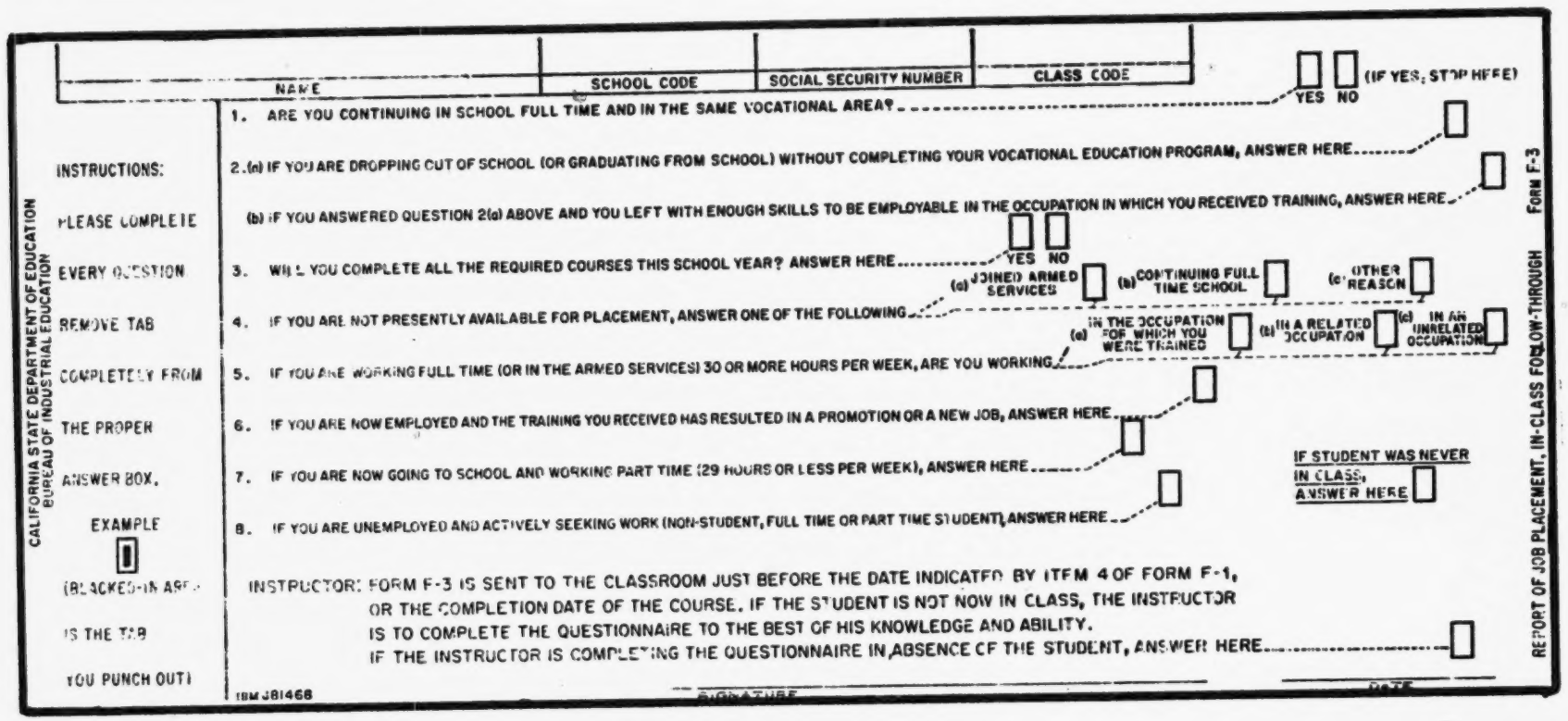
ITEM 2- Enter number of hours of gainful employment, if working, including work study and on-the-job training, for the purpose of determining "full-time" or "part-time" work status of the student.

ITEM 4- If the class, by itself, is designed to prepare a person for employment, enter the date that most clearly indicates his readiness for employment. If the class is not designed to fit the student for employment, enter the date of course completion. This item is also for the trade extension or supplementary education student who advances on the job or gets a new job.

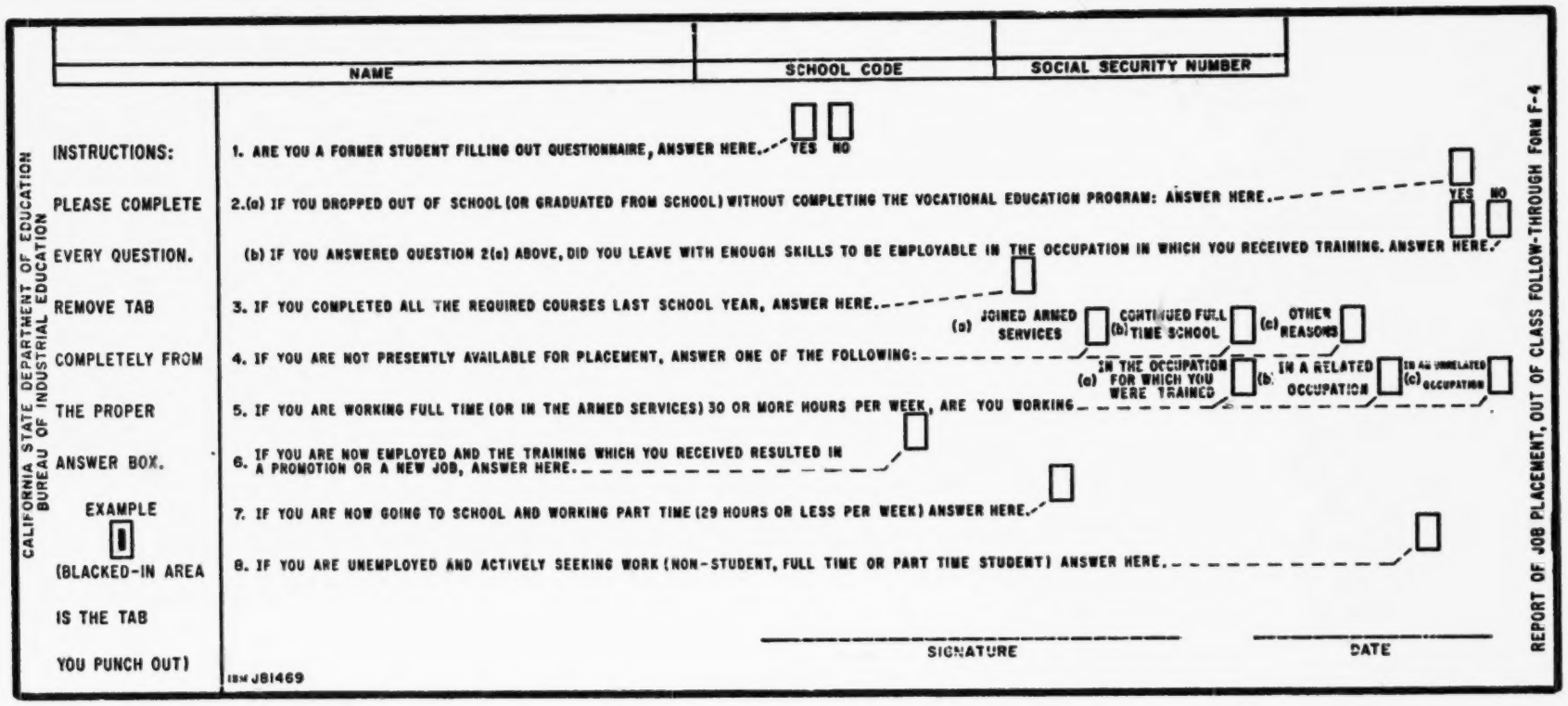
IBM J81467

Report of Job Placement

In-Class Follow-Through
Form F-3


CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF INDUSTRIAL EDUCATION
NAME
SCHOOL CODE
SOCIAL SECURITY NUMBER
CLASS CODE
INSTRUCTIONS:
PLEASE COMPLETE
EVERY QUESTION
REMOVE TAB
COMPLETELY FROM
THE PROPER
ANSWER BOX.
EXAMPLE
(BLACKED-IN AREA
IS THE TAB
YOU PUNCH OUT)
1. ARE YOU CONTINUING IN SCHOOL FULL TIME AND IN THE SAME VOCATIONAL AREA? YES NO (IF YES, STOP HERE)
2.(a) IF YOU ARE DROPPING OUT OF SCHOOL (OR GRADUATING FROM SCHOOL) WITHOUT COMPLETING YOUR VOCATIONAL EDUCATION PROGRAM, ANSWER HERE
(b) IF YOU ANSWERED QUESTION 2(a) ABOVE AND YOU LEFT WITH ENOUGH SKILLS TO BE EMPLOYABLE IN THE OCCUPATION IN WHICH YOU RECEIVED TRAINING, ANSWER HERE
3. WILL YOU COMPLETE ALL THE REQUIRED COURSES THIS SCHOOL YEAR? ANSWER HERE YES NO
4. IF YOU ARE NOT PRESENTLY AVAILABLE FOR PLACEMENT, ANSWER ONE OF THE FOLLOWING (a) JOINED) ARMED SERVICES (b) CONTINUING FULL TIME SCHOOL (c) OTHER REASON
5. IF YOU ARE WORKING FULL TIME (OR IN THE ARMED SERVICES) 30 OR MORE HOURS PER WEEK, ARE YOU WORKING (a) IN THE OCCUPATION FOR WHICH YOU WERE TRAINED (b) IN A RELATED OCCUPATION (c) IN AN UNRELATED OCCUPATION
6. IF YOU ARE NOW EMPLOYED AND THE TRAINING YOU RECEIVED HAS RESULTED IN A PROMOTION OR A NEW JOB, ANSWER HERE
7. IF YOU ARE NOW GOING TO SCHOOL AND WORKING PART TIME (29 HOURS OR LESS PER WEEK), ANSWER HERE
IF STUDENT WAS NEVER IN CLASS, ANSWER HERE
8. IF YOU ARE UNEMPLOYED AND ACTIVELY SEEKING WORK (NON-STUDENT, FULL TIME OR PART TIME STUDENT), ANSWER HERE
INSTRUCTOR: FORM F-3 IS SENT TO THE CLASSROOM JUST BEFORE THE DATE INDICATED BY ITEM 4 OF FORM F-1, OR THE COMPLETION DATE OF THE COURSE. IF THE STUDENT IS NOT NOW IN CLASS, THE INSTRUCTOR IS TO COMPLETE THE QUESTIONNAIRE TO THE BEST OF HIS KNOWLEDGE AND ABILITY.
IF THE INSTRUCTOR IS COMPLETING THE QUESTIONNAIRE IN ABSENCE OF THE STUDENT, ANSWER HERE
IBM J81468
SIGNATURE
DATE
REPORT OF JOB PLACEMENT, IN-CLASS FOLLOW-THROUGH Form F-3

Out-of-Class Follow-Through Form F-4


CALIFORNIA STATE DEPARTMENT OF EDUCATION
BUREAU OF INDUSTRIAL EDUCATION
NAME
SCHOOL CODE
SOCIAL SECURITY NUMBER
INSTRUCTIONS:
PLEASE COMPLETE
EVERY QUESTION.
REMOVE TAB
COMPLETELY FROM
THE PROPER
ANSWER BOX.
EXAMPLE
(BLACKED-IN AREA
IS THE TAB
YOU PUNCH OUT)
1. ARE YOU A FORMER STUDENT FILLING OUT QUESTIONNAIRE, ANSWER HERE. YES NO
2.(a) IF YOU DROPPED OUT OF SCHOOL (OR GRADUATED FROM SCHOOL) WITHOUT COMPLETING THE VOCATIONAL EDUCATION PROGRAM: ANSWER HERE. YES NO
(b) IF YOU ANSWERED QUESTION 2(a) ABOVE, DID YOU LEAVE WITH ENOUGH SKILLS TO BE EMPLOYABLE IN THE OCCUPATION IN WHICH YOU RECEIVED TRAINING. ANSWER HERE.
3. IF YOU COMPLETED ALL THE REQUIRED COURSES LAST SCHOOL YEAR, ANSWER HERE.
4. IF YOU ARE NOT PRESENTLY AVAILABLE FOR PLACEMENT, ANSWER ONE OF THE FOLLOWING: (a) JOINED ARMED SERVICES (b) CONTINUED FULL TIME SCHOOL (c) OTHER REASONS
5. IF YOU ARE WORKING FULL TIME (OR IN THE ARMED SERVICES) 30 OR MORE HOURS PER WEEK, ARE YOU WORKING (a) IN THE OCCUPATION FOR WHICH YOU WERE TRAINED (b) IN A RELATED OCCUPATION (c) IN AN UNRELATED OCCUPATION
6. IF YOU ARE NOW EMPLOYED AND THE TRAINING WHICH YOU RECEIVED RESULTED IN A PROMOTION OR A NEW JOB, ANSWER HERE.
7. IF YOU ARE NOW GOING TO SCHOOL AND WORKING PART TIME (29 HOURS OR LESS PER WEEK) ANSWER HERE.
8. IF YOU ARE UNEMPLOYED AND ACTIVELY SEEKING WORK (NON-STUDENT, FULL TIME OR PART TIME STUDENT) ANSWER HERE.
SIGNATURE
DATE
IBM J81469
REPORT OF JOB PLACEMENT, OUT OF CLASS FOLLOW-THROUGH FORM F-4

SERVICES AND REWARDS

Hypothesis. Students or former students would be more apt to answer questionnaires if they could foresee some benefits or reward for doing so. The following items are suggested as possible services (rewards) that might be offered to students for answering the questionnaires:

1. Job placement service. Job placement services are now offered by many schools independently or in conjunction with the California State Department of Employment. A further service to industrial education students might be to offer job placement service on a statewide basis for the lifetime of the student. A lifetime record of the student's training program and the jobs held would provide valuable data for long-term follow-up evaluations of industrial education programs.

2. Class schedule. The current class schedule could be mailed with the questionnaire. The study recommends that follow-through questionnaires go out on the student's birthdate each year. Some birthdates would not coincide with the effective date of the schedule. By comparing returns of those who get schedules as against those who do not, a measure could be made of whether or not the reward was effective. (Testing the hypothesis!!!)

3. Transcript services for industrial education students. To make this needed service possible, several events must occur:

(a) Standard student identification, such as using the social security number as recommended in this study

(b) A central data bank, or a method of collecting data from scattered data banks

(c) Directory of industrial education classes (such a directory would permit finding classes to fit individual needs)

(d) Cooperation of the non-industrial education part of the school (academic) so that transcript records could be complete

A recommendation of this study suggests that all students use the standardized registration form and that enrollment be used to identify the industrial education students. It would be only a short step to include all students--not just industrial education students--and offer a statewide clearing house for transcripts.

4. Occupational information. The making of occupational choices is becoming more difficult for individuals. Offering such services as an occupational information storage and retrieval system, occupational counseling and advising, and occupational testing services might be considered as rewards.

5. Vocational counseling. Vocational counseling, although a regular part of any industrial education program, could still be considered as a reward or a special service to a former student.

6. Scholarship, loan assistance, work study program. Any of the special services offered by schools are rewards for being, or having been, a student. The continued offering of these services could be an inducement for

the student to participate in a follow-through study. There is also a growing need for an information storage and retrieval system for scholarship and loan information.

7. An aid in college choice. An industrial education program probably exists for every individual's educational need. Getting the two together is the problem. A statewide directory of industrial education programs, and a library of college catalogues (both two- and four-year colleges) would aid materially in satisfying this need. This aid or service is needed for all students--not just industrial education students. This would be a service to offer students going on with their education after completing an industrial education program.

8. Directory of industrial education programs. The data collected from the Verification of Enrollment Form F-1, as recommended in this study, will include a standardized code number for all industrial education classes and schools. A print-out of the interpretation of these codes would be a directory of industrial education programs. The directory would help materially in finding the right industrial education program for students with specific needs.

9. Other educational opportunities. Offer information on other educational opportunities such as extension or correspondence courses and courses offered by industry or other social organizations. Public and private schools, community, and industry would supply this information as a service to former students.

10. Government educational services. Notify students of the different local, state, and federal vocational education programs, such as the Manpower Development and Training Act, Vocational Education Act of 1963, etc.

11. Directory of community services. Educational opportunities are only a part of the student needs. Offering information on other community services, such as health, rehabilitation, social welfare, employment testing, recreation, and so forth would equally be considered as rewards for participating in a follow-through study. Some cities in California have directories of health, welfare, and recreation agencies. A service to students and to the community would be the dissemination of this information.

12. Testing services. The testing services of counseling departments could be made available to former students needing to make changes in their occupation choice.

MAILING PROCEDURES

Specifications for the Out-of-Class Follow-Through Form F-4, Electronic Data Processing and Mailing Program

There are four possible addresses on the Standardized Registration for Junior Colleges Form R-1. All four addresses are to be exhausted before a "stop" order is given to the computer or EDP procedures.

Specifications:

1. First-class mail to the addressee, return postage guaranteed

2. Return postage enclosed (or return card)

3. Addressor's address preprinted on return questionnaire

4. Return card ready for machine processing (when the prescored response tab is removed by hand punching, the card becomes machine readable)

5. All operations are automatic:

   (a) The addressing of the form, from previous data

   (b) The noting of any transaction of the mailed form

   (c) Starting other steps, such as mailing the second card to the same address, returning the same questionnaire for "changes," etc.

   (d) All correct returns stored for later retrieval

6. Return card complete within itself (there should be little or no clerical work involved in the follow-through mailing program. Every step should be completely automated because of the volume of students to be studied on a continuing basis.)

The questionnaire part of the Out-of-Class Follow-Through Form F-4 has been designed, but the actual processes and EDP programs to be used to send and receive the questionnaire have not been designed. One recommendation was to use a continuous, preprinted form so the student's address can be printed by computer or EDP. Two cards hinged end-to-end would be inserted in a window envelope, with the addressee's address showing. The back of this card would be birthday greetings, etc., and instructions for answering the questionnaire. The other card would contain the questions and response positions, with the addressor's address on the reverse side.

There are many other processes, but availability of machinery and degree of automation desired must be considered before an actual design is stabilized.

State of California

(A COPY)

Department of Education

Memorandum

To : Richard S. Nelson, Chief

Date : May 1, 1967

File No.:

From : Wilson C. Riles, Director
Office of Compensatory Education

Subject: INDUSTRIAL EDUCATION INFORMATION SURVEY

In answer to your inquiry as to the use of an ethnic background question in the proposed Information Storage and Retrieval System for Reporting Job Placement Data of Persons Trained in Industrial Education Programs in California Public Schools, this office, in reviewing the regulations concerning the uses of such a question, can find no objections to its use as presently worded.

The information as you have proposed to collect it would provide more accurate data for evaluating industrial education programs in relation to their meeting the special needs of students.

WCR:MB:sar
cc: Wayne M. Harris, Special Project Consultant
Bureau of Industrial Education

DEFINITIONS OF TERMS USED IN INDUSTRIAL EDUCATION

California State Department of Education
Bureau of Industrial Education
Sacramento, 1967

The following terms were selected from Definitions of Terms in Industrial Education, published by the Bureau of Industrial Education, Richard S. Nelson, Chief, Sacramento, California, 1967.

ADULT VOCATIONAL EDUCATION

-instruction offered day or evening to adults or out-of-school youth over 16 years of age who are engaged in or are preparing to enter an occupation. Vocational education for adults is chiefly of an upgrading and updating nature, offered on a part-time basis, or of a retraining nature for persons displaced by automation or technological changes.

ADVISORY COMMITTEE

-a group of persons, usually outside the educational profession, selected for the purpose of offering advice and counsel to the school regarding the vocational program. Members are representatives of the people who are interested in the activities with which the vocational program is concerned. (See also craft advisory committee.)

COUNSELOR, GUIDANCE

-an experienced and trained person who helps another individual to understand himself and his opportunities, to make appropriate adjustments, decisions, and choices in the light of his unique characteristics, and to initiate a course of training or work in harmony with his selection.

COURSE OF STUDY

-an inclusive outline of the objectives, experiences, skills, projects, demonstrations, related information, and methods involved in teaching a school subject, covering a specified period of time.

EVALUATION

-a term used in education indicating the procedure for determining the effectiveness of instruction.

FOLLOW-UP STUDY, VOCATIONAL

-a survey to determine what occupations the students and graduates of vocational education courses enter and how effective their training was in relationship to actual needs of the job.

GENERAL INDUSTRIAL COURSE

-a class organized to give specific preparation for an occupation in a group where shop instruction in several closely allied trades is conducted simultaneously. Courses may be organized to give preparation for one or more production jobs that do not fall into the trade classification.

GUIDANCE SERVICES

-those activities which have as their purpose helping pupils assess and understand their abilities, aptitudes, interests, environmental factors, and educational needs; assisting pupils in increasing their understandings of educational and career opportunities; and, aiding pupils in making optimum use of educational and career opportunities through the formulation of realistic goals. These activities include counseling pupils and parents, evaluating the abilities of pupils, assisting pupils to make their own educational and career plans and choices, assisting pupils in personal and social adjustment, and working with other staff members in planning and conducting guidance programs.

GUIDANCE, VOCATIONAL

-the process of assisting individuals to understand their capabilities and interests, to choose a suitable vocation, and to prepare for, enter, and make successful progress in it.

INDUSTRIAL EDUCATION

-a generic term applying to all types of education related to industry, including industrial arts education, vocational industrial education (trade and industrial education), and much technical education.

IN-SERVICE TRAINING FOR TEACHERS

-instruction and supervision for employed instructional personnel for the purpose of improving their professional abilities.

JOB

-a specific, assigned task which provides the media by which the student practices and develops skills for an occupation.

JUNIOR COLLEGE

-an institution of higher education which offers the first two years of college instruction, frequently grants an associate degree, and does not grant a bachelor's degree. Offerings include transfer and/or terminal programs (with an immediate employment objective) at the post-secondary instructional level and also may include adult education programs. It is an independently organized institution (public or non-public) or an institution which is a part of the public school system or an independently organized system of junior colleges. The term does not refer to the lower division of a four-year institution, even if this lower division is located on a campus entirely different from the campus of the parent institution. (See community college.)

OCCUPATIONAL INFORMATION

-systematically organized data used by guidance personnel for the purpose of helping persons make a vocational choice. Material concerns the nature of the work, duties, responsibilities, and compensations involved in the several vocations, including information about employment outlook, promotional opportunities, and entrance requirements.

ON-THE-JOB TRAINING

-instruction in the performance of a job given to an employed worker by the employer during the usual working hours of the occupation. Usually the minimum or beginning wage is paid.

PART-TIME PROGRAMS, VOCATIONAL

-programs conducted for workers during the usual working hours of the occupation. The three general kinds follow:

Part-time trade extension classes--instruction given to employed workers for the purpose of increasing or extending their skill and knowledge in the trade or occupation in which they are or have been engaged.

Part-time trade preparatory classes--instruction given to workers who have left the full-time school for the purpose of fitting themselves for useful employment in trades, occupations, or fields of industry other than those in which they are or have been employed.

Part-time general continuation classes--instruction given to employed persons for the purpose of enlarging their civic or vocational intelligence. Instruction is not confined to trade or industrial pursuits but may cover any subject relative to civic or vocational needs offered to workers who return to the school during their usual working hours.

PLACEMENT SERVICE

-assistance in helping persons to locate work, either part-time or full-time in the field for which they are trained, which is consistent with their abilities, experiences, and backgrounds. When offered by the school, it is a phase of the vocational guidance program and involves liaison with employers to learn of job vacancies and success or failure factors of student-learners or graduates.

PRE-EMPLOYMENT TRAINING

-organized, brief, intensive instruction for entrance into employment in a specific job or retraining for workers leading to new duties or a new position.

PREPARATORY TRAINING

-programs preparing enrollees for employment.

PRIVATE VOCATIONAL SCHOOL

-a school established and operated by an agency other than the state or its subdivisions, and supported by other than public funds, which has as its purpose the preparation of students for entrance into or progress in trades or other skilled occupations.

PUBLIC VOCATIONAL SCHOOL

-a secondary school under public supervision and control and supported by public funds which provides instruction that will enable high school youth and adults to prepare for, enter, and make progress in a skilled trade or occupation of their choice.

REIMBURSABLE VOCATIONAL PROGRAM

-a class or curriculum--offered through a public school, teacher training institution or under contract--which is organized and conducted in accordance with the provisions of the state plan for vocational education approved by the U. S. Office of Education. Such programs are eligible to receive funds from the state (from state and federal vocational education appropriations) to cover in part certain costs already incurred. Whether or not aid actually is received is immaterial.

SURVEY, OCCUPATIONAL

-an investigation and evaluation to gather pertinent information about a single industry or the occupations of an area to determine the need for training, the prevalent practices, the labor supply and turnover, for the purpose of maintaining the vocational program at a realistic level.

SURVEY, VOCATIONAL EDUCATION

-a study to obtain necessary information as a basis for the proper development of programs of vocational education. It serves to identify the needs for vocational training, recommend suitable types of classes, assist in the development of new instructional processes, and evaluate the results of work already done.

TEACHER CERTIFICATION

-the approval action, based on minimum standards adopted in the state, taken by legally authorized school authorities on the professional and technical qualifications of teachers.

TECHNICAL EDUCATION

-education to earn a living in an occupation in which success is dependent largely upon technical information and understanding of the laws of science and principles of technology as applied to modern design, production, distribution, and service.

TECHNICIAN (INDUSTRIAL)

-a worker on a level between the skilled tradesman and the professional scientist or engineer. His technical knowledge permits him to assume some duties formerly assigned to the graduate engineer or scientist. For example, technicians may design a mechanism, compute the cost, write the specifications, organize the production, and test the finished product. There are technicians in other occupational fields.

TRADE AND INDUSTRIAL EDUCATION CLUBS

-organizations composed of vocational industrial education students whose objectives are to develop leadership qualities as they perfect their shop skills and knowledges. (Also called Vocational Industrial Clubs.)

TRADE EXTENSION CLASS

-(See part-time programs, vocational.)

VOCATIONAL EDUCATION

-education designed to develop skills, abilities, understandings, attitudes, work habits and appreciations, encompassing knowledge and information needed by workers to enter and make progress in employment on a useful and productive basis. It is an integral part of the total education program and contributes toward the development of good citizens by developing their physical, social, civic, cultural, and economic competencies.

VOCATIONAL EDUCATION ACT OF 1963 (PUBLIC LAW 88-210)

-enacted "to authorize federal grants to states to assist them to maintain, extend, and improve existing programs of vocational education, to develop new programs of vocational education, and to provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the states--those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, and those with special educational handicaps--will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actural or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training."

VOCATIONAL SCHOOL

-a school which is organized separately under a principal or director for the purpose of offering training in one or more skilled or semiskilled trades or occupations. It is designed to meet the needs of high school students preparing for employment and to provide upgrading or extension courses for those who are employed.

VOCATIONAL SUBJECT

-any school subject designed to develop specific skills, knowledges, and information which enable the learner to prepare for or to be more efficient in his chosen trade or occupation.

WORK EXPERIENCE

-employment undertaken by a student while attending school. The job may be designed to provide practical experience of a general character in the work-a-day world.

WORK EXPERIENCE EDUCATION (OCCUPATIONAL EXPERIENCE)

-employment undertaken as part of the requirements of a school course and designed to provide planned experiences, in the chosen occupation, which are supervised by a teacher-coordinator and the employer.

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A PROPOSED MODEL FOR AN INFORMATION STORAGE AND RETRIEVAL SYSTEM FOR REPORTING JOB PLACEMENT FOLLOW-THROUGH DATA OF PERSONS TRAINED IN INDUSTRIAL EDUCATION PROGRAMS IN CALIFORNIA PUBLIC SCHOOLS

Recommendations are:

1. Field tests be conducted in at least three school districts during the school year 1967-68.

2. EDP programs be written to comply with the recommendations and requirements of "the system."*

3. Standardized registration forms be used in conjunction with standard codes for schools and classes, and that social security numbers be used to identify students.

4. "The system" once started will continually collect data from students for their lifetime of education and work.

5. Services to students, such as continued educational opportunities, occupational counseling, job placement, transcript service, etc., will become a part of the follow-through evaluative process.

6. "The system" remain versatile enough to accept new factors for additional evaluations of industrial education.

7. Industrial educators be forward-looking enough to accept new EDP methods, such as optical mark sensing or optical character readers, when they become operational.

8. Prescored IBM Port-a-Punch cards (questionnaires) be used to start "the system," because of availability of processing equipment.

9. "The system" will work very close with, or become a part of, the California Regional Educational Data Processing Centers (4).

10. "The system" use the California Regional EDP Center's Student Data Transmittal form for registering industrial education high school students.

11. The efforts of this study be closely coordinated with any proposed activity of the Vocational Education Information System (VEIS) (10).

12. All students registering in California public schools offering industrial education programs be required to use the standardized registration forms.

13. A permanent advisory committee be formed to oversee the trial runs and later statewide operation of "the system."

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*"The System" is substituted for the title.

14. Job placements be recognized for persons going into the armed services and of trade extension students.

15. An evaluation is conducted to evaluate "the system."

16. Students be completely responsible for any changes that are necessary to make on the records.

17. Any formula used to compute job placements use on <u>unduplicated</u> enrollment count.

18. One hundred percent reporting be required through the In-Class Follow-Through Form F-3.

19. Individual schools be responsible for collecting sufficient returns of the Out-of-Class Follow-Through Form F-4, to make a local job placement follow-through study feasible.

20. Some one person, preferably a computer expert, be charged with the overall responsibility of the technical part of "the system."

21. California educators who have had some successes with follow-up studies using EDP and computers be used as consultants.

22. Computer analysts and commercial facilities be contacted to write the necessary EDP and computer programs, and conduct field tests of "the system."

23. Some consideration be made of the possible uses of the data collected, other than job placement reporting.

24. Special recognition be made to each member of the ad hoc advisory committee.

25. A system analysis be made of any school district <u>before</u> "the system" is applied, either for trial runs or for a complete operation.

26. A file and index be maintained of all materials and correspondence accumulated during the building of "the system." A blow-by-blow account.

27. An annual report be made describing the outcome of the use of data from "the system" and what other studies have been started as a result of "the system."

28. Experts who have used EDP to do job placement follow-up studies from other states be invited to comment on "the system" even before trial runs are made.

29. The data collection may be used only for the evaluating and assessment of industrial education programs and for research.

30. Ample opportunity exists for the improvement of the communication and dissemination of factual-objective statements about industrial education in California.

31. Every opportunity to incorporate this study into a larger information storage and retrieval system be investigated.

32. That industrial educators do react to factual-objective data about industrial education programs and make the changes that are necessary.

33. Industrial educators recognize that their reaction to evaluations, objectively derived, has relevance to the immediate future of industrial education.

34. A study begin on the statistical analysis for data collected on a statewide basis.

35. Other industrial educators be given the opportunity to concentrate on a particular industrial education problem.

36. The ground work be laid for including junior college and adult industrial education students in the California Regional Education Data Processing Center (4) for pupil personnel data.

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